CLAIMS

1 - An inkjet recording element, comprising a support and at least one ink-receiving layer, wherein said support comprises a base polyester layer and a porous ink-permeable upper polyester layer, said upper polyester layer comprising a continuous phase of polyester having an ink absorbency rate resulting in a dry time of less than 10 seconds and a total absorbent capacity of at least 14 cm^3/m^2, and in that said ink-receiving layer comprises at least one hydrosoluble binder and at least one hybrid aluminosilicate polymer obtainable by a preparation method that comprises the following steps:

a) treating a mixed aluminum and silicon alkoxide of which the silicon has both hydrolyzable substituents and a non-hydrolyzable substituent, or a mixed aluminum and silicon precursor resulting from the hydrolysis of a mixture of aluminum compounds and silicon compounds only having hydrolyzable substituents and silicon compounds having a non-hydrolyzable substituent, with an aqueous alkali, in the presence of silanol groups, the aluminum concentration being maintained at less than 0.3 mol/l, the Al/Si molar ratio being maintained between 1 and 3.6 and the alkali/Al molar ratio being maintained between 2.3 and 3;

b) stirring the mixture resulting from step a) at ambient temperature in the presence of silanol groups long enough to form the hybrid aluminosilicate polymer; and

c) eliminating the byproducts formed during steps a) and b) from the reaction medium.

2 - The recording element according to Claim 1, wherein the alkali of step a) to prepare the hybrid aluminosilicate polymer is selected from the group consisting of sodium, potassium, or lithium hydroxide, diethylamine and triethylamine.

3 - The recording element according to Claim 1, wherein the aluminum concentration used to prepare the hybrid aluminosilicate polymer is maintained between 1.4×10^{-2} and 0.3 mol/l.

4 - The recording element according to Claim 1, wherein the aluminum concentration used to prepare the hybrid aluminosilicate polymer is maintained between 4.3×10^{-2} and 0.3 mol/l.

5 - The recording element according to Claim 1, wherein said alkali/Al molar ratio to prepare the hybrid aluminosilicate polymer is about 2.3.

6 - The recording element according to Claim 1, wherein said alkali/Al molar ratio to prepare the hybrid aluminosilicate polymer is about 3.

7 - The recording element according to Claim 1, wherein the method for preparing the hybrid aluminosilicate polymer comprises, after step b) and before step c), a step d), by which alkali is added in order to reach an alkali/Al molar ratio of 3 if this ratio has not already been reached in step a).

8 - The recording element according to Claim 1, wherein said mixed aluminum and silicon precursor resulting from hydrolysis of a mixture of aluminum compounds and silicon compounds only having hydrolyzable substituents and silicon compounds having a non-hydrolyzable substituent is a product resulting from the mixture in an aqueous medium (i) of a compound selected from the group consisting of aluminum salts, aluminum alkoxides and aluminum halogenoalkoxides and (ii) at least one compound selected from the group consisting of silicon alkoxides and chloroalkoxides only having hydrolyzable substituents, and (iii) at least one compound selected from the group consisting of silicon alkoxides and chloroalkoxides having a non-hydrolyzable substituent.

9 - The recording element according to Claim 8, wherein said mixed aluminum and silicon precursor is the product resulting from the mixture (i) of an aluminum halide and (ii) a mixture having at least one silicon alkoxide only having hydrolyzable substituents and at least one silicon alkoxide having a non-hydrolyzable substituent.

10 - The recording element according to Claim 9, wherein the ratio of silicon alkoxide only having hydrolyzable substituents to silicon alkoxide having a non-hydrolyzable substituent is between 0.1 and 10 in moles silicon.

11 - The recording element according to Claim 10, wherein the ratio of silicon alkoxide only having hydrolyzable substituents to silicon alkoxide having a non-hydrolyzable substituent is 1 in moles silicon.

12 - The recording element according to any one of Claims 8 to 11, wherein the silicon alkoxide having a non-hydrolyzable substituent is represented by the formula

$$R'\text{-}Si\text{-}(OR)_3$$

wherein R represents an alkyl group comprising 1 to 5 carbon atoms
R' represents H, F, or a substituted or unsubstituted linear or branched alkyl or alkenyl group comprising 1 to 8 carbon atoms.

13 - The recording element according to Claim 12, wherein R' represents a methyl, ethyl, n-propyl, n-butyl, 3-chloropropyl, or vinyl group.

14 - The recording element according to Claim 13, wherein said silicon alkoxide having a non-hydrolyzable substituent is methyltriethoxysilane or vinyltriethoxysilane.

15 - The recording element according to Claim 9, wherein said silicon alkoxide only having hydrolyzable substituents is tetramethyl orthosilicate or tetraethyl orthosilicate.

16 - The recording element according to Claim 1, wherein said ink-receiving layer comprises at least 5 percent by weight of aluminosilicate polymer compared with the total weight of the dry receiving layer.

17 - The recording element according to Claim 1, wherein the hydrophilic binder is gelatin or polyvinyl alcohol.

18 - The recording element according to Claim 1, wherein said base polyester layer comprises poly(ethylene terephthalate).

19 - The recording element according to Claim 1, wherein said continuous phase of polyester of said upper polyester layer comprises poly(ethylene terephthalate), poly(ethylene-1,4-cyclohexylenedimethylene terephthalate), or mixtures thereof.

20 - The recording element according to Claim 1, wherein said porous upper polyester layer comprises at least one voiding agent present in an amount of from 30 % to 50 % by volume of said upper layer.

21 - The recording element according to Claim 20, wherein said voiding agent is selected from the group consisting of fluoropolymers, silica, alumina, barium sulfate, calcium carbonate, polystyrene, poly(methyl methacrylate), polycarbonates, and polyolefines.

22 - The recording element according to Claim 20, wherein said voiding agent is between 0.1 μm and 10.0 μm in size.

23 - The recording element according to Claim 20, wherein said ink-permeable upper polyester layer has interconnecting voids.